Linguistic structures in true, plausible false and false autobiographical memories

“Linguistic structures in true, probable false and false memories”

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Background - Methods in lie detection

1) Reality-monitoring model (RM)

2) Criteria-based content analysis (CBCA) - 18 linguistic criteria

3) Scientific content analysis (SCAN) - comparing written with spoken statement & 3 linguistic criteria

4) Investigative discourse analysis (IDA) - 6 linguistic criteria

Critic - Porter & Yuille (1996) - only 3 from of 18 CBCA criteria valid:
1) amount of detail, 2) coherence rating, 3) admitting lack of memory.

Memory and Law Committee Working Party of the BPS Research Board (2008) - lack of reliable methods in accuracy judgment of eyewitness testimonies.

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Empirical evidence

Research on computerized content analyses of spoken and written data

- Cognitive load
- High self-monitoring
- Underlying feelings of guilt and irritation
- Reduced self-focus, dissociation form statement ownership
- Increased other-focus

Deception in electronic communication

- Planning and editing
- To provide a persuasive and credible statement trying to deceive the listener

Aim of this study

Assessing the latent linguistic structure and features

Sample size - NHST in quantitative communication research

- A-priory power analysis for medium effect size - 363 samples
- 917 samples, from which there are 316 true memories, 303 probable false and 297 false memories.

Multivariate analysis - offering greater construct validity due to language being encoded and decoded as combination of interrelated language features as compared to univaraite analysis

Results

Factor analysis explored the underlying linguistic structure grouping similar linguistic variables

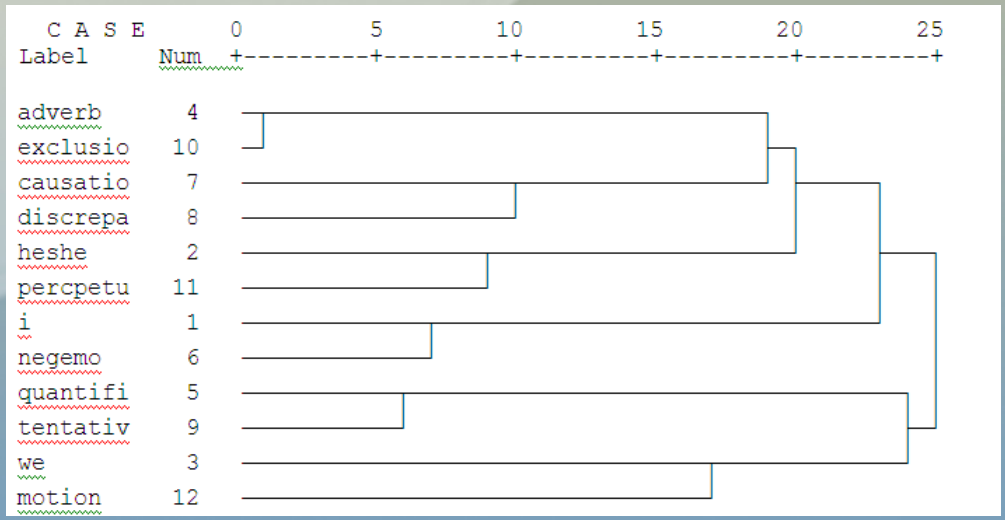
- 1) Self-references
- 2) Other-references
- 3) Cognitive processes
- 4) Qualifiers

Hierarchical cluster analysis classified linguistic groups that form a distinctive fundamental linguistic structure.

- Dendograms with main-clusters and sub-clusters

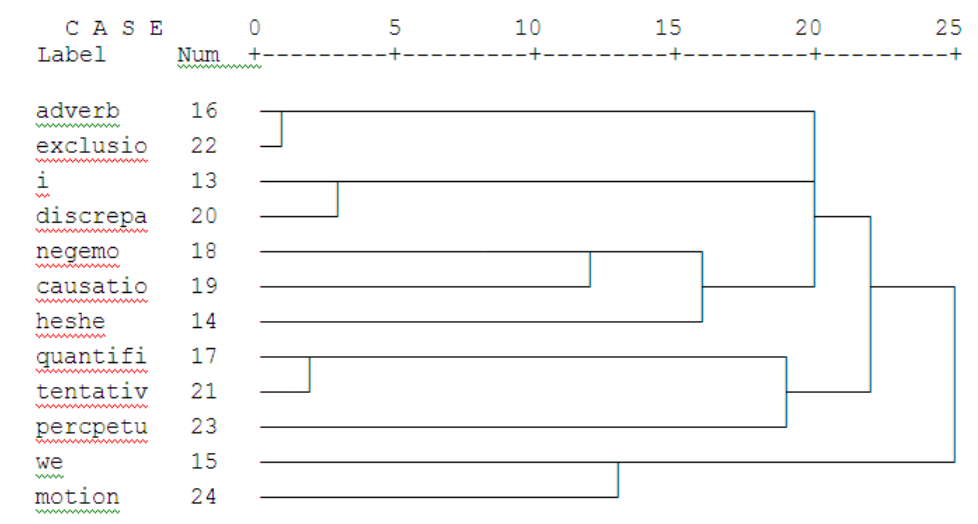
True memories

	Factor loading			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Linguistic function	Cognitive processes	Self-references	Qualifiers	Other-references
Linguistic variable				
I		-.727		
he/she				.468
we		.782		
adverb	.469			
quantifiers			.798	
negative emotion		-.527		
causation	.416			
discrepancy	.678			
tentativeness			.613	
exclusion	.640			
perceptual proc.				.655
motion				-.533
% of variance	15.146	13.871	10.048	9.268
Cumulative %	15.146	29.017	39.065	48.333



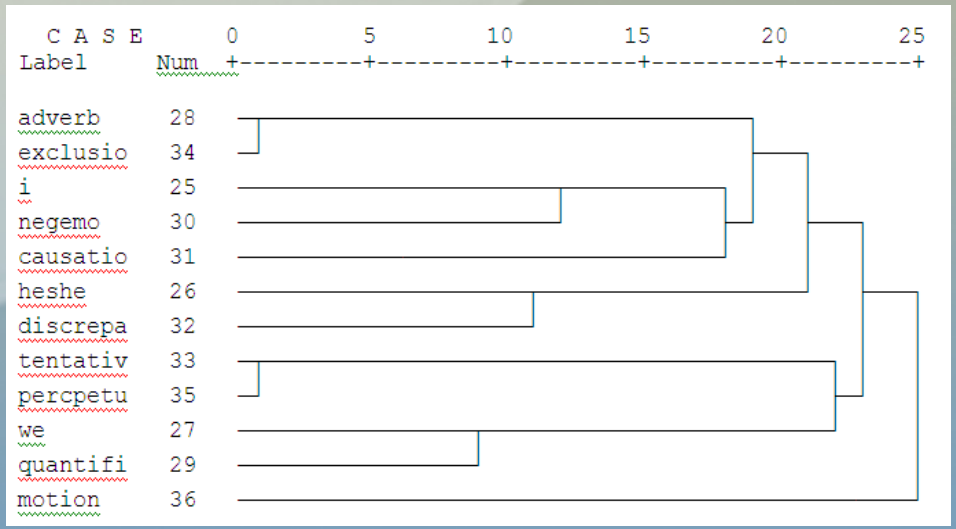
Probable false memories

	Factor loading			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Linguistic function	Self-references	Cognitive processes	Qualifiers	Other-references
Linguistic variable				
I	.805			
he/she				.549
we	-.799			
adverb		.711		
quantifiers			.604	
negative emotion				.557
causation				.636
discrepancy		.458		
tentativeness			.571	
exclusion		.747		
perceptual proc.			.519	
motion			-.576	
% of variance	14.434	13.072	9.889	9.345
Cumulative %	14.434	27.506	37.395	46.740



False memories

	Factor loading			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Linguistic function	Self-references	Cognitive processes	Qualifiers	Other-references
Linguistic variable				
I	-.792			
he/she			-.318	.748
we	.826			
adverb		.720		
quantifiers	.484			
negative emotion		.566		
causation		.309		
discrepancy				.585
tentativeness			.726	
exclusion		.658		
perceptual proc.			.792	
motion				-.614
% of variance	16.186	13.541	10.469	9.561
Cumulative %	16.186	29.700	40.169	49.730



Thank you!